

### **REMARKS**

By the above amendment, claims 1, 4, 7, 8 and 9 which stand objected because of the indicated informalities, have been amended to overcome the informalities noted by the Examiner, such that this objection should now be overcome.

The indication that claims 2, 3, 5 and 6 are objected as being as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, is acknowledged. However, applicants submit that the parent claims patentably distinguish over the cited art as will become clear from the following discussion, and therefore, claims 2, 3, 5 and 6 have been retained in dependent form at this time.

The rejection of claims 1 and 8 under 35 U.S.C. 103(a) as being unpatentable over Takamori (US 4,769,806) in view of Mueller (US 6,611,540) and Reece (US 5,565,674) and the rejection of claims 4, 7 and 9 under 35 U.S.C. 103(a) as being unpatentable over Takamori in view of Mueller, Reece and Asoma (US 6,459,672), such rejections are traversed, and reconsideration and withdrawal of the rejections are respectfully requested.

At the outset, as to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed

invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be remedied with conclusions about what is "basic knowledge" or "common knowledge". The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

At the outset, applicants note that the present invention is directed to a disc driving apparatus and, in particular, an optical pickup of an optical pickup mechanism, wherein heat generating parts are disposed and wherein the heat generation affects operation of the heat generating parts. In accordance with the present invention as recited in claim 1, for example, the optical pickup comprises a pickup housing made of metal, in which are mounted a laser diode emitting detection light for reproducing or recording information on the disc, a laser driver circuit board for controlling the laser diode and other parts, wherein the laser diode and laser

driver circuit board are mounted in thermal contact with the pickup housing so as to be disposed adjacent to each other, while providing a thermal separation portion for thermally separating the laser diode and the laser driver circuit board. Applicants note that each of the other independent claims recite substantially similar features and as described in the specification of this application, this structural arrangement overcomes the problems of the prior art. Referring to Figs. 2a and 2b of the drawings and as described at pages 15-17 of the specification of this application, the laser diode 27 and the laser driver circuit board 29 which are in thermal contact with the metal pickup housing 24 are separated by a thermal separation member 25 so that the thermal flow-through within the pickup housing is substantially reduced as described at page 18, lines 10-12 of the specification. That is, the recited structural arrangement enables thermal insulation or separation of the laser diode which emits laser light and the laser driver circuit board for controlling the laser diode, each of which generate heat, and thereby enable obtaining uniformity or evenness of temperature distribution within the optical pickup. As such, each of the heat generating parts as represented by the laser diode which emits light and the driver circuit board for controlling a driving of the laser, which generate heat, can achieve stable operation without receiving ill influences due to heat generation from the other adjacent part thereof inside of the optical pickup, and thereby enable improvement of reliability of the optical disc apparatus. Applicants submit that such features as recited in each of the independent claims of this application are not disclosed or taught in the cited art, as will become clear from the following discussion.

In rejecting claims 1 and 8 over the combination of Takamori, Mueller and Reece, the Examiner recognizes that the cited art does not disclose or teach the claimed invention. More particularly, with respect to Takamori, while the Examiner contends that this patent discloses various features, including a laser diode 12, the Examiner contends that Takamori discloses "an inherent laser driver circuit board for

controlling the laser diode". Applicants submit that there is no disclosure in Takamori of a laser driver and, in particular, "a laser driver circuit board". Moreover, with respect to "inherency", reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 U.S.C. §102 requires that each and every element as set forth in the claim is found, either expressly or inherently described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

Applicants submit that the Examiner has recognized that Takamori does not disclose a laser circuit driver board, and further, the Examiner recognizes additional deficiencies of Takamori in relation to the claimed invention. That is, the Examiner states:

Takamori does not show the detail of forming the laser circuit board and that the laser diode and the laser driver circuit board are mounted in thermal contact with the pickup housing so as to be disposed adjacent to each other, while providing a thermal separation portion for thermally separating the laser diode and the laser driver circuit board. (emphasis added)

Thus, it is apparent that Takamori does not disclose or teach the recited features of the independent and dependent claims of this application in the sense of 35 U.S.C. 103 and all claims patentably distinguish thereover. The Examiner next cites Mueller contending that this patent shows that integration of drive circuit board and laser diode permits the minimization of lead inductance between the output of

the driver and the diode terminals (Column 2, lines 54-58). However, the Examiner recognizes that Mueller does not specify the way of integration. Irrespective of this position by the Examiner, applicants note that Mueller does not overcome the deficiencies of Takamori and is directed to diode lasers combined with driver circuitry, both of which are immersed in a cryogenic cooling fluid. Applicants submit that such type of lasers would not be utilized in an optical pickup of a disc driving apparatus, as claimed. In this regard, it is noted that column 5 of Mueller provides a listing of typical utilization of the cryo-diode laser and it is apparent that such utilization is not directed to an optical pickup of a disc driving apparatus. Additionally, while the Examiner refers to column 2, lines 54-58 of this patent, this portion merely indicates that the integration of drive circuitry and laser diode permits minimization of lead inductance between the output of the driver and the diode terminals has no relation to the problem of heat generation and Mueller like Takamori provides no disclosure or teaching of a thermal separation portion for thermally separating the laser diode and the laser driver circuit board, as recited in independent claim 1 and other independent claims of this application. As such, Mueller taken alone or in combination with Takamori fails to provide a disclosure or teaching of the claimed subject matter of this application, and applicants submit that all claims patentably distinguish over this proposed combination of references in the sense of 35 U.S.C. 103 and should be considered allowable thereover.

Finally, the Examiner cites the patent to Reele contending "Reele shows an optical assembly wherein the photo electronic elements and the circuit 30 are integrated on a single substrate 40 (Column 4, lines 11-44)." (emphasis added)

Irrespective of the position by the Examiner, applicants submit that the disclosure of Reele is directed to an integrated optical detection packaging assembly for mounting and aligning a focus and tracking photo detector array and front facet detectors to an optical read/write head. This patent discloses optical detectors in the

form of photo diodes which apparently receive light and provide an output indicative thereof as illustrated in the various figures of this patent. Thus, irrespective of the position set forth by the Examiner, it is not seen that Reelee discloses a laser diode emitting detection light for reproducing or recording information on said disc, and a laser driver circuit board for controlling said laser diode, as recited in independent claim 1 and other independent claims of this application. Additionally, there is no disclosure or teaching in Reelee that the laser diode and the laser driver circuit board are mounted in thermal contact with the pickup housing so as to be disposed adjacent to each other, while providing a thermal separation portion for thermally separating said laser diode and said laser driver circuit board as recited in claim 1 and other independent claims of this application. Rather, Reelee apparently suggests that heat generated in a heat source is guided up to a heat-sink portion so as to be irradiated outside therefrom, thereby preventing heat transmission to other parts. In contradistinction, the present invention provides for a heat insulation wall for thermally separating the laser diode and the laser driver circuit board for the purpose of avoiding heat generated by each of the elements from thermally interfering with one another. Applicants submit that not only does Reelee fail to provide a laser diode emitting light and a laser driver circuit board therefor arranged in the manner defined with a thermal separation portion for thermally separating the laser diode and the laser driver circuit board, the other cited art also fail to disclose or teach such features and the proposed combination represents a hindsight reconstruction attempt utilizing the principle of "obvious to try", which is not the standard of 35 U.S.C. 103. See In re Fine, supra.

The hindsight reconstruction attempt of the Examiner is evidenced by the "rationale" utilized by the Examiner including "one of ordinary skill in the art, who has been looking for the detail of the driver circuit to finishing the design, would have been motivated" to follow Mueller and Reelee's teaching to do the integration to

minimize the inductance" (emphasis added). Applicants submit that minimizing inductance relates to an electrical characteristic and does not relate to a thermal characteristic and, in particular, provides no disclosure or teaching of "a thermal separation portion for thermally separating said laser diode and said laser driver circuit board" which are disposed in the manner defined. Contrary to the Examiner's position, there is no disclosure or teaching of the claimed structural arrangement in Reelee, Mueller and Takamori taken alone or in any combination thereof, and the combination is not directed to the problem or solution as disclosed and claimed herein. Rather, the Examiner has taken bits and pieces from the prior art, although not the bits and pieces as claimed, and suggests that it would be obvious to combine the same in an attempt to reconstruct the claimed invention, which reconstruction is deficient for the reasons given above. Thus, applicants submit that the independent claims and dependent claims of this application including independent claims 1 and 8 as well as claims 4, 7 and 9 patentably distinguish over this proposed combination of references in the sense of 35 U.S.C. 103 and should be considered allowable thereover.

With respect to the addition of Asoma to the combination of Takamori, Mueller and Reelee in relation to claims 4, 7 and 9, the Examiner indicates Asoma shows an apparatus, which includes an additional laser diode B (Fig. 3; column 5, lines 17-19) for emitting a detection light for use with a DVD. Irrespective of this disclosure of Asoma, applicants note that Asoma does not overcome the deficiencies of the other cited art in relation to the claimed invention including a "thermal separation portion for thermally separating said laser diode and said laser driver circuit board" as recited in claim 1 and the other independent and dependent claims of this application. Thus, applicants submit that all claims patentably distinguish over this proposed combination of references in the sense of 35 U.S.C. 103 and should be considered allowable thereover.

In view of the above amendments and remarks, applicants submit that all claims present in this application should now be in condition for allowance, and issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (520.40496X00) and please credit any excess fees to such deposit account.

Respectfully submitted,



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